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State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

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9/11/90

(DATE)

MEMORANDUM

TO:

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THROUGH:

D. I. Kanjarpina, P.E. Section Chief
Bureau of Federal/State Case Management

FROM:

E. G. Kamp, P.E., Case Manager
Bureau of Federal/State Case Management

CASE:

~~LE~~ LE Carpenter

CASE
COMPONENT:

Rem. Investigation

SUBJECT:

Final R2 Report, Revised Pages
#s 12, 13, 19a, 45, 48, 57, 59, 77, 77a, 82, 95, Table I

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toluene. Naphtha-related compounds were detected primarily in the vicinity of the tank farm and impoundment area, and to a lesser extent in the vicinity of the former starch drying beds. As a result of the soil gas survey findings, several test pits were added to the scope of the soil investigation.

The soil investigation, consisting of test pit and hand auger sampling, indicated base neutral contamination in the areas of the former impoundment and tank farm, starch drying beds and Smog Hog condensate tanks. The predominant base neutral compounds detected were phthalates and PAHs. The soil investigation confirmed volatile organic contamination in the vicinity of the former impoundment and tank farm. The primary volatile organic compounds detected were ethylbenzene and xylene.

Groundwater sampling indicated that the near-surface was the most contaminated zone of the aquifer beneath L.E. Carpenter. Analytical results indicated elevated levels of volatile organic and base neutral compounds in groundwater samples from shallow monitor wells. As in the case of soil, the primary compounds detected were ethylbenzene and xylene, apparently due to historical leakage from storage tanks, many of which have been removed or emptied. The highest level of volatile organic contamination were limited to the area between the Wharton Enterprises property and the tank farm. Base neutral contamination detected in the shallow zone of the aquifer was primarily phthalate-related and predominantly restricted to the tank farm and impoundment area. MW-1, located in Area II, was the only shallow well outside the eastern portion of the site with high levels of groundwater contamination. MW-1, MW-3, MW-6, MW-7, MW-10 and MW-11s all have contained floating product.

Analyses of ground water samples from intermediate-depth monitor wells indicated much less groundwater contamination. Except at MW-11i, none of the wells contained volatile organic or base neutral compounds in excess of the NJSDWA MCLs or NJDEP Groundwater Standards. (Identification of applicable or relevant and appropriate requirements (ARARs) and/or health-based action levels for groundwater and other media will be developed as part of the risk assessment and feasibility study.)

Groundwater samples from deep monitor wells contained low concentrations of volatile organic and base neutral compounds near the quantification limit. Laboratory analyses of groundwater samples from all shallow, intermediate and deep monitor wells indicated that priority pollutant metals, pesticides, and PCBs were either not detected or were below the NJSDWA MCLs or NJDEP Groundwater Standards.

Surface water samples from five locations adjacent to and on the site indicated no volatile organic compounds in the Rockaway River, infiltration gallery, or in the northern drainage feature. Surface water in the Air Products drainage ditch contained xylene at 44 ug/L. None of the surface water sampled contained elevated levels of base neutral compounds or metals. Analyses of stream sediment samples indicated base neutral compounds at locations sampled in the Rockaway River, infiltration gallery, northern drainage feature and the Air Products drainage ditch. As was the case with on-site soils, the primary base neutral compounds detected were phthalates and PAHs. In addition, stream sediments contained elevated levels of priority pollutant metals at two Rockaway River locations, the northern drainage feature and the Air Products drainage ditch.

Analyses of monthly air samples collected from four locations across the site between February and November 1989 did not detect elevated levels of volatile organic compounds or priority pollutant metals.

The hydrogeologic investigation showed that the site is composed of miscellaneous fill, cobbles and boulders in the surficial 20 feet. The primary geologic unit, composed of fine to coarse-grained sands, lies generally between the bottom of the fill and the top of bedrock. Bedrock, described as medium to coarse-grained granite, ranges from approximately 50 feet below ground surface adjacent to the railroad right-of-way near the Rockaway River to approximately 160 feet below ground surface at the eastern side of the site.

Groundwater at the site is approximately four to eight feet below ground surface, and is flowing slowly to the east-northeast. The intermediate zone of the aquifer exhibits a piezometric level approximately one-half foot higher than the shallow water table elevation. Intermediate depth ground water appears to be flowing east-northeast also. Ground water in the deep zone of the aquifer exhibits a piezometric level approximately one and one-half feet to three feet higher than the water table elevation at the site. Ground water in the deep zone of the aquifer flows to the north.

Aquifer testing at intermediate and deep wells indicate similar hydraulic conductivity values. The average hydraulic conductivity for the intermediate and deep zones of the aquifer is 1.8×10^{-2} cm/sec. Transmissivity calculated from the hydraulic conductivity values ranged from 14,500 to approximately 65,000 gallons per day per foot.

An assessment of critical contaminants at the site and their environmental fate and potential impact was conducted. Ten compounds of concern from volatile organic, semivolatile organic and metal groups were evaluated based on concentration, presence in various media and documented toxicological impacts to humans and the environment. This assessment identified possible off-site receptors to airborne and waterborne contaminants. Generally, human receptors are those downwind of the site that work at the industrial facilities and those downgradient from the site that use the shallow aquifer as a potable water source. Environmental receptors are flora and fauna in the Rockaway River in the vicinity of the site and in the woodlands downwind of the site. A more detailed risk assessment is being performed as part of the Supplemental RI activities.

Based on the findings of this investigation, it is concluded that there is no migration of volatile organic compounds from L.E. Carpenter property to offsite groundwater. Two monitor well clusters installed offsite on the Air Products & Chemicals, Inc., and Wharton Enterprises properties, downgradient of the former impoundment and tank farm areas, do not indicate the presence of volatile organic compounds in ground water attributable to the site. However, base neutral compounds have been detected in the shallow well on the Wharton Enterprises property. Soil contamination appears to be limited to the site and immediately downgradient of the former impoundment area on the Wharton Enterprises property. In addition, surface water and stream sediment in the drainage ditch on the Air Products property indicate the presence of volatile organics and base neutral compounds also detected on the L.E. Carpenter property. Base neutral compounds were detected in the Rockaway River locations sampled downgradient of the former impoundment and tank

Many of the tanks containing liquid in June 1987 had their contents removed and disposed offsite prior to May 1990. Conversely, seven tanks (Tanks 1, E-1, E-4, E-5, E-6, E-7, and E-8) listed as empty or not currently onsite in June 1987 were found to contain liquid in May 1990. The reason for the earlier tank status assessments is not clear. Six of these tanks contained 550 gallons or less of liquid. The testing and removal of the tank contents, as well as tank closure or removal, is being conducted separately from the RI by WSI.

collected at floor drain discharge points, an entry point for tank transmission lines and at the loading dock on the south side of Building 13 (refer to Figure 6).

In Area II, test pits were excavated and sampled in the vicinity of MW-1 and MW-17 and beneath a concrete slab adjacent to the loading dock at Building 14. Hand-auger samples were collected at locations on a grid established across Area II and at the loading dock on the west side of Building 13 (refer to Figure 7).

In Area III, test pits were excavated at the former starch drying beds, the Smog Hog condensate tanks between Buildings 8 and 9, and the MEK and waste MEK tanks west of Building 9. Hand-auger samples were collected at the Building 9 loading dock, beneath the transformers south of Building 9, and beneath the diesel tank adjacent to Building 2 (refer to Figure 8).

The following will discuss the results of the test pit and hand auger analysis. Concentrations exceeding NJDEP Soil Action Levels were considered elevated in this report. Please refer to Tables 7 to 11 for test pit results and Tables 12 to 16 for hand auger sample results. Appendix E contains laboratory analytical reports.

5.2.2 Area I - Test Pit and Hand Auger Results

For the purposes of analytical results discussion, Area I will be divided into six zones, consisting of:

1. The former impoundment zone.
2. The tank farm.
3. The Smog Hog condensate tanks adjacent to Building 14.
4. The parking lot north of Building 14.
5. The area west of Building 12.
6. Points immediately adjacent to Building 13 consisting of floor drain outlets, a loading dock and the tank transmission line.

In addition, the discussion of results in each of these zones will be organized according to analytical parameters, which included VO+ 15, BN+ 15, PP metals, PCBs, and TPH:

1. Former Impoundment Zone

Volatile Organics in Former Impoundment Zone

Nine test pits excavated in this zone (TP-1 to TP-9) were sampled at two depths: (a) surface and (b) water table in each pit. Volatile organic testing in test pits in the impoundment zone indicated the presence of xylene, ethylbenzene, methylene chloride and various unidentified VO compounds. Total targeted VO concentrations at these locations ranged from non-

4. Parking Area North of Building 14

Volatile Organic Compounds North of Building 14

TP-67 and TP-69 to TP-74 were excavated across the parking area located north of Building 14. TP-67, located at the edge of the parking lot near the former impoundment area, contained 1,786,000 ppb of xylenes, methylene chloride, acetone, ethyl benzene and 2-butanone. No VO compounds above the NJDEP Soil Action Levels were detected in TP-69 through TP-73. TP-74 contained 380,000 ppb of xylenes, acetone, chlorobenzene and ethylbenzene. A total of 503,000 ppb of non-targeted VO compounds were detected in TP-74 (refer to Table 7).

Base Neutral Compounds North of Building 14

Base neutral analysis performed on samples collected from test pits in the paved area indicated the highest level of targeted BN contamination in the test pits closest to the former impoundment area and tank farm (TP-67, TP-71, TP-74). Base neutral compounds detected were predominantly phthalate related. Bis(2-ethylhexyl) phthalate was the main phthalate detected ranging from 450 ppb in TP-70 to 26,000,000 ppb in TP-67. Nontargeted BN compounds ranged from not detected in TP-71 to 5,030,000 ppb in TP-67. No elevated levels of base neutral compounds were detected in TP-69 and TP-70 (refer to Table 8).

Priority Pollutant Metals North of Building 14

Metals analysis on samples collected in the test pits in the parking area indicated the presence of mercury (124 ppm in TP-67, 38 ppm in TP-69), arsenic (26.8 ppm in TP-69), lead (124 ppm in TP-67, 204 ppm in TP-69, 229 ppm in TP-71, 203 ppm in TP-72, 154 ppm in TP-74), and cadmium (3.1 ppm in TP-72, 3.7 ppm in TP-74). Analytical results did not indicate the presence of metals in TP-70 and TP-73 (refer to Table 9).

Pesticides and PCBs North of Building 14

Pesticide/PCB analysis performed on test pit samples in the parking lot north of Building 14 did not indicate the presence of any pesticides or PCBs in TP-69 to TP-74 (refer to Table 10). The soil samples collected from TP-67 was not tested for pesticides or PCBs.

5. West of Building 12

As a result of the soil gas survey, an additional test pit, TP-75, was excavated in Area I adjacent to and west of Building 12. Analytical parameters included VO+15, BN+15, and PP metals. No compounds were detected above the NJDEP Soil Action Levels in the soil samples collected (refer to Tables 7, 8 and 9).

Metals Near Loading Dock

Metals analysis performed on samples collected adjacent to the Building 9 loading dock indicated elevated levels of cadmium and mercury. HA-16, HA-17 and HA-18 contained no metals in excess of NJDEP Soil Action Levels.

6. Transformers South of Building 9

Pesticide/PCB analysis was performed on three hand auger samples collected from below the transformers located immediately south of Building 9 (HA-20 to HA-22). Analytical results did not indicate the presence of any pesticides or PCBs (refer to Table 16) above the level of quantitation.

7. Diesel Tank Adjacent to Building 2

Three hand auger samples were collected from beneath the diesel tank located adjacent to Building 2 near the Washington Forge Pond and analyzed for total petroleum hydrocarbons. TPH concentrations detected ranged from 910 ppm to 2500 ppm (refer to Table 15).

5.3 Groundwater Sampling Results

5.3.1 General Overview

Groundwater samples were collected in two rounds from 24 wells across the three areas of investigation to assess the impact of former L.E. Carpenter operations on the groundwater at the site. Each sample collected was analyzed for the full USEPA priority pollutant plus 40 list of compounds. This included VO+15, BN+15, PP metals, and organochlorine pesticides and PCBs. Analysis was also performed for seventeen additional compounds identified by the NJDEP in the 1986 Consent Order. The list of compounds analyzed for in each of the samples is included in Appendix D. In addition, floating product samples from MW-11s, MW-12s, and MW-12i were collected for fingerprint analysis. Refer to Tables 15, 17, 18, 19, and 20 for summaries of analytical testing results, and Figures 6, 7, and 8 for sample locations for the following discussions. Appendix E contains laboratory analytical reports.

The following discussions of groundwater analytical results for Areas I, II and III are organized according to analytical parameters as follows:

- Volatile organics and fingerprint analysis.
- Base neutrals.
- Metals and inorganics.
- Pesticides and PCBs.

Each subsection is organized by well depth as follows: shallow, intermediate and deep. Concentrations exceeding NJSDWA-MCLs or NJAC 7:9-6 Groundwater Standards were considered elevated in this report.

Shallow Wells

Shallow wells in Area II, with the exception of MW-1, contained no targeted BN compounds during Round 1. In Round 2, MW-5 contained 17 ppb of DEHP. Non-targeted BN concentrations ranged from not detected in MW-5 and MW-17s to 78 ppb in MW-16s during Round 1. In Round 2, only MW-16s contained non-targeted BN compounds, which totalled 8.7 ppb. MW-1 contained 499 ppb of targeted BN compounds and 520 ppb of non-targeted BN compounds during Round 1, and 1,368 ppb of targeted BN compounds and 2,376 ppb non-targeted BN compounds during Round 2.

Intermediate Depth Wells

Base neutral analysis of samples collected from intermediate depth wells showed no compounds in MW-15i in either sampling round and in MW-16i during Round 1. DEHP was detected in MW-16i at 2.4 ppb during Round 2. Fifty-six ppb of non-targeted BN compounds were detected in MW-16i during Round 1. In Round 2, non-targeted BN compounds totaled 39 ppb in MW-15i and 92 ppb in MW-16i.

Deep Wells

MW-17d and the former production well contained no BN compounds in either sampling round.

3. Metals and Inorganics in Area II Groundwater

No levels were detected which exceeded the New Jersey MCLs or Groundwater Standards. Refer to Table 19 for a summary of analytical results discussed below.

Shallow Wells

During both sampling rounds, metals analysis of Area II shallow wells indicated the presence of zinc in each well and arsenic in MW-16s.

Intermediate Wells

Metals analysis indicated low levels of zinc in MW-15i and MW-16i during Round 1, and nickel and zinc in MW-16i during Round 2.

Deep Wells

During Round 1, MW-17d contained low levels of chromium and zinc, and the former production well contained low levels of zinc. During Round 2, MW-17d contained chromium and the former production well contained copper and zinc.

None of the Area II wells contained cyanide, and only MW-1 contained phenols, at a concentration of 440 ppb.

groundwater sampling. At present, product is being recovered from MW-6, MW-10 and MW-11s. MW-7 contains only a sheen at present.

Floating Product

Distribution of the floating product is shown in Figure 22. This depiction presumes an isotropic and homogeneous reservoir in the zone of water table fluctuation. Integrating the results of soil boring information and a qualitative analysis of reservoir properties may modify the distribution as depicted in Figure 22. Historical analysis of this floating product indicates that it is primarily xylene. MW-1 contains a floating product which is primarily ethylbenzene and xylene.

Intermediate Wells

Intermediate depth well piezometry generally mirrors the shallow well piezometry across the site. As shown on Figures 18 and 19, groundwater is flowing to the east-northeast, as in the case of the shallow water table conditions. It should be noted that MW-15i was not used in developing the October 24, 1989 intermediate water level contour map due to an anomalous reading for that date (see Table 31). Measurements in the intermediate depth wells indicate that piezometric levels are approximately one-half foot higher than in the shallow water table wells.

Deep Wells

Due to the late completion date of MW-14d, only one complete set of deep well water levels was collected and plotted. As shown on Figure 20, deep well piezometry indicates a range of elevations across the site from 627.27 (feet MSL) at MW-18d, to 627.97 (feet MSL) at MW-11d, to 627.88 feet (MSL) at MW-14d. Although this is a limited array of monitoring points to indicate deep well piezometry, contouring of the water elevations in these wells indicates a general flow direction to the north. An important characteristic of deep well piezometry is that the piezometric elevations are approximately 1.5 to 3 feet higher in elevation than shallow water table elevations at the same location. This indicates a strong vertical upward gradient in the eastern portion of the site, i.e., groundwater at depth will tend to flow upward as it moves beneath the site.

MW-17d was designated a deep well due to its penetration of bedrock. However, bedrock is shallower at this location. MW-17d is screened approximately 100 feet higher above sea level than other deep wells. At this depth, connection with intermediate zone sediments is considered more probable than connection with deep zone sediments. Therefore, Figure 20 depicts the deep zone groundwater contours excluding the data from MW-17d.

5.6.3 Aquifer Testing Results

Methodology

The Hvorslev "Time-Lag Permeability Test" (1951) technique was used to estimate hydraulic conductivity (soil permeability) values for the intermediate and deep aquifer

zones. The technique utilizes head ratio values plotted against time on a semi-log graph (refer to Appendix I for head ratio-time plots and calculations).

Results

Hydraulic conductivity values were calculated from the two tests performed at each well location. The well locations tested included MW-11i, MW-11d, MW-12i, MW-15i, MW-16i, MW-17d, MW-18i, and MW-18d (see Table 32). Two separate tests were

As shown on Figure 1, the site is bordered by the Rockaway River to south, Washington Forge Pond to the west, and a drainage ditch on the Air Products property located to the north. Contaminants adsorbed onto soil and stream sediments particles may be slowly dispersed through the surface water flow in the drainage ditch and river even though these contaminants are not indicated in the River water itself. The drainage ditch, as well as the locations of the former non-contact cooling water discharge points, ultimately discharge into the Rockaway River to the south and east of the site. There is an indication of nontargeted base neutrals in the drainage ditch water, and a wider variety of potential contaminants in the drainage ditch sediment. Contaminants present in the drainage ditch sediments in these areas may migrate slowly downstream from the sample locations.

The Rockaway River eventually discharges to the Jersey City Reservoir located in Boonton, New Jersey, approximately 18 miles downstream to the northeast of the site. The Rockaway River passes through several other environmental cleanup sites which have documented discharges to the river and through several highly industrialized areas. Contaminated sediment transport would have no discernible impact on downstream users of the water.

The Rockaway River in the area of the site is a losing stream. That is, it may provide a source of recharge to the ground water below. We considered the possibility for contaminants in surface water to infiltrate to the groundwater table below through recharge. However, the BNA contaminants detected in the sediments of the ditch and river are relatively immobile and fixed in those sediments.

Potential human receptors for exposure to contaminants in stream sediment and surface water would be those in direct contact with water or sediment. Additionally, aquatic organisms and plants present in the river near the site represent a potential receptor group. Possible recreational uses of the Rockaway River are swimming and fishing. Because the frequency of exposure to humans from recreational use of the river is very low, and because no contamination is indicated in the surface water or sediment in the Rockaway River, exposure risks are expected to be low but will be evaluated in the risk assessment using existing RI and supplemental RI data.

Groundwater Pathway

Shallow ground water beneath the site flows in an east northeast direction. A review of well records within a one-mile radius of the site indicates that three domestic wells, ranging in depth from 42 feet to 120 feet below ground surface, and two public supply wells, ranging in depth from 33 to 42 feet below ground surface, exist in the approximate downgradient direction from the site. It is not known whether these well records are up to date.

Based on analytical results, the primary transport of site-related contamination to off-site areas would be via groundwater flow. In view of the mapped direction of groundwater flow in the shallow zone (the contaminated zone of the aquifer), the primary areas of off-site concern are the Wharton Enterprises and Air Products properties and its impoundment zone and tank farm. At present, no VO compounds attributable to L.E. Carpenter have been detected in wells at the two properties, however, BN compounds have been detected in MW-14s on the Wharton Enterprises property (refer to Section 5.3.2).

Base Neutral Compounds

Base neutral compounds, relating primarily to phthalates, were detected in MW-11i. MW-13i and MW-14i, located offsite on the Air Products and Wharton Enterprises properties, respectively, contained no BN compounds. Other intermediate well locations on-site upgradient of the former impoundment area and the tank farm contained low concentrations of BN compounds. Accordingly, intermediate depth ground water containing high levels of base neutral compounds is limited to the immediate vicinity of MW-11 and the former impoundment area.

Metals

Metals analysis performed on intermediate depth well samples from across the site indicates that intermediate depth groundwater has not been adversely affected.

Pesticides/PCBs

Analysis of samples collected from intermediate depth wells did not indicate the presence of pesticides or PCBs in this zone of the aquifer.

Deep Wells

Four deep monitor wells (MW-11d, MW-14d, MW-17d, MW-18d) and the former production well, were sampled to assess the deep aquifer water quality. Based on the analytical results for volatile organics, base neutrals, metals and pesticides and PCBs, there has been no adverse effect on deep water quality.

Summary of Groundwater Quality Conclusions

Volatile organic-related contamination is limited to the shallow zone of the aquifer within the property boundary of the site. The area bounded by MW-2, MW-3, MW-11s and MW-12s contains the primary occurrence of VO contamination at the site. A more localized area of VO contamination is found at MW-1. There appears to be no VO contamination in the intermediate depth zone of the aquifer except perhaps at MW-11i. There is no VO contamination of the deep zone of the aquifer.

Base neutral contamination in the shallow zone of the aquifer is limited to the area near MW-3, similar to the extent of VO contamination. MW-14s contains low levels of DEHP which suggests the possible migration of contaminants to that area in the immediate vicinity which is downgradient of the impoundment zone. However, the volatiles associated with the DEHP in the impoundment area are not present in the groundwater, which suggests a different source. MW-11i is the only intermediate depth well containing BN concentrations of concern, and it is important to note that neither MW-13i or MW-14i contain BN compounds. There is no BN contamination of the deep zone of the aquifer.

There is no contamination of site groundwater by pesticides or PCBs. Levels of metals exceeding New Jersey MCLs or Groundwater Standards were not detected at any location except MW-12s, where selenium was detected during Round 1 but not during Round 2.

TABLE 1: RAW MATERIAL INVENTORY AS OF 6/22/87 AND 5/30/90
L.E. CARPENTER FACILITY, WHARTON, N.J.

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MATERIAL	LOCATION	VESSEL (CAPACITY)	QUANTITY AS OF 6/22/87	QUANTITY AS OF 5/30/90
Naptha	tank farm	Tank #1 (15000)	2000 gallons	empty
Diocetyl phthalate (DEHP)	tank farm	Tank #2 (15000)	0 gallons	empty
Waste Xylene	tank farm	Tank #3 (15000)	1700 gallons	empty
Xylene	tank farm	Tank #4 (15000)	2700 gallons	empty
Texanol (an ester alcohol)	tank farm	Tank #5 (3000)	2300 gallons	empty
S-160**	tank farm	Tank #6 (3000)	1100 gallons	empty
Epoxidized Soy Bean Oil	tank farm	Tank #7 (10000)	1000 gallons	< 50 gallons
Boiler Blowdown Water	adjacent bldg. 12	tank	0 gallons	rainwater
Propane	adjacent bldg. 12	tank	200 gallons	removed
No. 6 Fuel Oil	east of bldg. 12	Tank E-1 (10000)	0 gallons	10000
No. 6 Fuel Oil	east of bldg. 12	Tank E-2 (30000)	15000 gallons	< 50 gallons
Waste MEK and Pigments	west of bldg. 9	Tank E-3 (10000)	1000 gallons	6000
Methyl ethyl ketone (MEK)	west of bldg. 9	Tank E-4 (10000)	1900 gallons	500
Smog Hog Condensate *	between bldg. 8 & 9	Tank E-5 (550)	0 gallons	550
Smog Hog Condensate *	east of bldg. 14	Tank E-6 (550)	0 gallons	550
Smog Hog Condensate *	east of bldg. 14	Tank E-7 (550)	0 gallons	550
Smog Hog Condensate *	between bldg. 8 & 9	Tank E-8 (550)	0 gallons	550
Diesel Oil	adjacent bldg. 2	Tank E-9 (550)	550 gallons	400
Fragrance	inside bldg. 13	drum	unknown	9500
S-141***	inside bldg. 13	drum	500 gallons	removed
PVC Resin (Dispersion)	inside bldg. 13	bags	25000 lbs.	removed
PVC Resin (Blending)	inside bldg. 13	bags	52000 lbs.	removed
Magnesium hydroxide	inside bldg. 13	bags	14000 lbs.	removed
Stabilizers (Ba,Cd,Zn)	inside bldg. 13	bags	3000 gallons	removed
Wetting Agent	inside bldg. 13	bags	900 lbs.	removed
Calcium Carbide	inside bldg. 13	bags	14000 lbs.	removed
Antimony Oxide	inside bldg. 13	bags	1100 lbs.	removed
Zinc borate	inside bldg. 13	bags	250 lbs.	removed
Titanium dioxide	inside bldg. 13	bags	17000 lbs.	removed
Celogen OT (blowing agent)	inside bldg. 13	bags	250 lbs.	removed
ABF-2	inside bldg. 13	drum	55 gallons	removed
Irogel 900	inside bldg. 13	drum	55 gallons	removed
Methyl isobutyl ketone (MIBK)	NW loading dock bldg. 9	drum	55 gallons	removed
Cyclohexanol	NW loading dock bldg. 9	drum	55 gallons	removed
Toluene	NW loading dock bldg. 9	drum	110 gallons	removed
Clear Print Finishes	inside bldg. 9	50 drums	22000 lbs.	removed
Black ink	inside bldg. 9	3 pails	15 gallons	removed
Phthalo blue ink	inside bldg. 9	3 pails	15 gallons	removed
Orange ink	inside bldg. 9	3 pails	15 gallons	removed
Red oxide ink	inside bldg. 9	4 pails	20 gallons	removed
Monastral red ink	inside bldg. 9	11 pails	55 gallons	removed
Yellow ink	inside bldg. 9	7 pails	35 gallons	removed
Indo yellow ink	inside bldg. 9	3 pails	15 gallons	removed
Gold ink	inside bldg. 9	2 pails	10 gallons	removed
Pearl ink (80% MIBK)	inside bldg. 9	5 pails	25 gallons	removed
Silver Sparkly ink	inside bldg. 9	1 drum	30 gallons	removed
Isophrone	inside bldg. 9	1 drum	55 gallons	removed
Miscellaneous inks	inside bldg. 9	30 drums/pails	400 gallons	removed

NOTES: Underground tanks are denoted with an "E" prefix

* - As of 5/30/90 the Smog Hog Tanks were full of oily water. Originally these tanks collected plasticizer fumes, primarily di-octyl phthalate.

** - S-160 is butyl benzyl phthalate.

*** - S-141 is ethyl hexyl diphenyl phosphate.